

## Revision of some types of the genus *Bembecia* Hübner, 1819 in the Püngeler collection in the Museum for Natural History of the Humboldt University, Berlin (Sesiidae)

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**Abstract.** We here establish the identity of three clearwing moth species, *Bembecia viguraea* (Püngeler, 1912), *Bembecia auricaudata* (Bartel, 1912) **stat. rev.** and *Bembecia polyzona* (Püngeler, 1912), from Central Asia. All three species were revised by Căpușe (1973) who selected lectotypes that were misinterpreted by subsequent authors. Two taxa, *Dipsosphecia wagneri* Püngeler, 1912 **syn. n.** and *Bembecia tsvetajevi* Gorbunov, 1992 **syn. n.**, were found to be synonyms of *Bembecia viguraea* (Püngeler, 1912) and *Bembecia polyzona* (Püngeler, 1912), respectively.

**Zusammenfassung.** Die Identität der drei Glasflüglerarten *Bembecia viguraea* (Püngeler, 1912), *Bembecia auricaudata* (Bartel, 1912) **stat. rev.** und *Bembecia polyzona* (Püngeler, 1912) aus Zentralasien wird geklärt. Căpușe (1973) revidierte diese Arten und legte Lectotypen fest, die jedoch von nachfolgenden Autoren falsch interpretiert wurden. Die beiden Taxa *Dipsosphecia wagneri* Püngeler, 1912 **syn. n.** und *Bembecia tsvetajevi* Gorbunov, 1992 **syn. n.** werden hier als neue Synonyme von *Bembecia viguraea* (Püngeler, 1912) bzw. *Bembecia polyzona* (Püngeler, 1912) eingeführt.

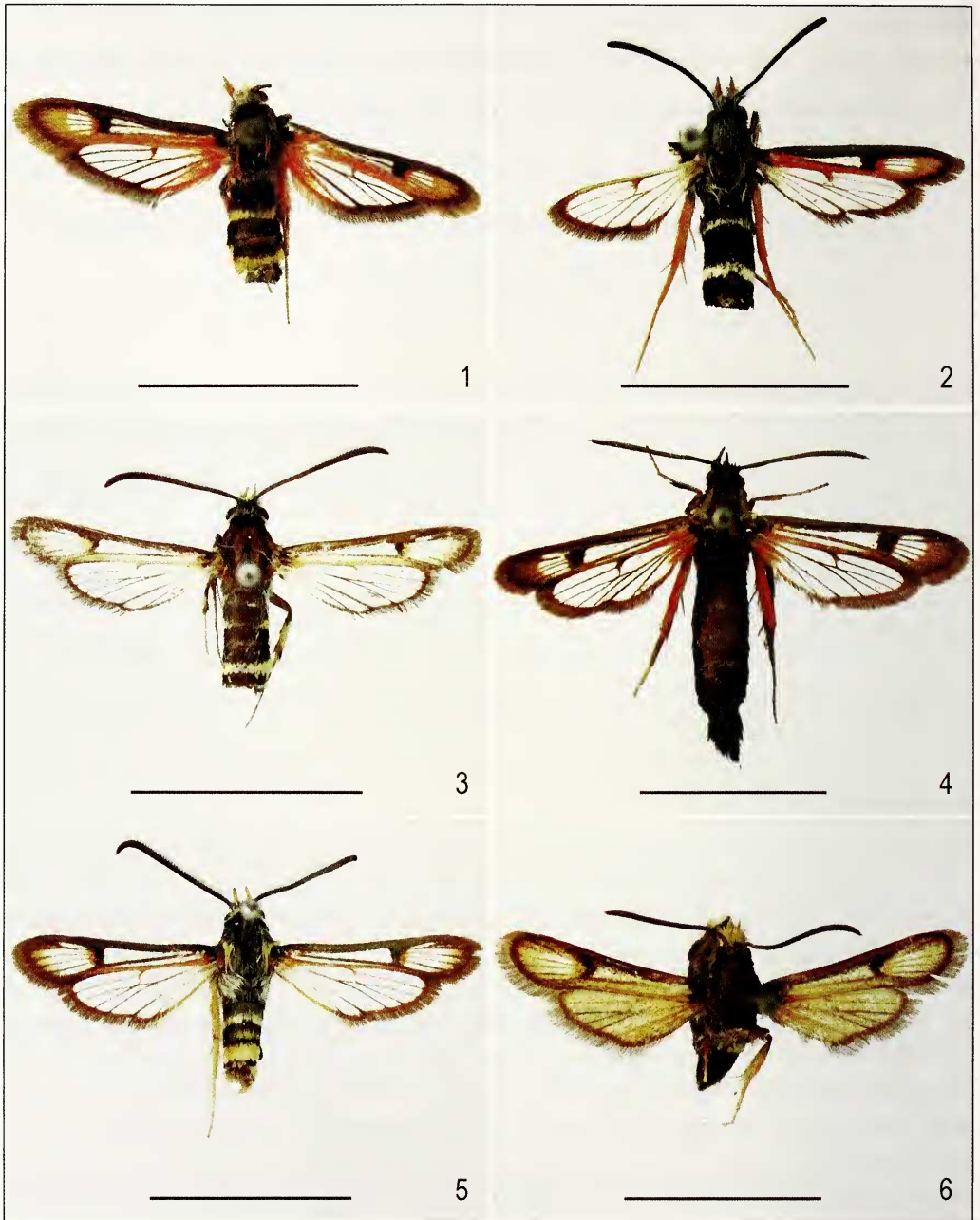
### Introduction

During the examination of the Püngeler collection in the Museum for Natural History of the Humboldt University, Berlin (MNHB) the authors realized discrepancies in the current understanding of the identity of a number of *Bembecia* Hübner, 1819 species (Sesiidae) from Central Asia and the type material of the taxa in question. These inconsistencies date back to a taxonomic revision by Căpușe (1973) who dissected some of the type specimens, designated lectotypes and introduced new generic combinations for a number of sesiide taxa described from the Püngeler collection. Püngeler himself had selected ‘types’ and ‘cotypes’ from the type series, which, however, were not appropriately designated in the original descriptions (Püngeler 1912). Therefore, Căpușe’s lectotype designations were necessary and are considered valid here. As these designations did not agree with Püngeler’s type selections, they were not consequently followed by other authors including Špatenka & Laštůvka (1989) and Špatenka et al. (1999) leading to misinterpretations of several taxa in current literature. We therefore wish to clarify the identity of the species in question and thereby establish stability in nomenclature.

### *Bembecia viguraea* (Püngeler, 1912)

**Figs 1–2**

*Dipsosphecia viguraea* Püngeler, 1912: 394. Căpușe 1973: 139 (*Bembecia*). Lectotype ♀ (MNHB) (Fig. 1): Ost-Turkestan, Aksu, Rückbeil 1900 – Pr. gen. Nr. 3143 [sic!] (I.C.) des. Căpușe 1973: 139. Labels:



**Figs 1–6.** Adults of *Bembecia* spp. 1. *B. viguraea* (Püngeler, 1912), ♀, lectotype (MNHB). 2. *B. viguraea* (Püngeler, 1912), ♂, lectotype of *Dipsosphecia wagneri* Püngeler, 1912 (MNHB). 3. *B. auricaudata* (Bartel, 1912), ♂, holotype (MNHB). 4. *B. auricaudata* (Bartel, 1912), ♀, paralectotype of *Dipsosphecia wagneri* Püngeler, 1912 (MNHB). 5. *B. auricaudata* (Bartel, 1912), ♂, paralectotype of *Dipsosphecia polyzona* Püngeler, 1912 (MNHB). 6. *B. polyzona* (Püngeler, 1912) ♀, lectotype (MNHB).

“Ost-Turkestan, Aksu, Rückbeil 1900 (recto); 2/1902, v. R. Tancre (verso)” – “Cotype, *virgurea*, Püng. ♀” – “Lectotypus ♀, *Bembecia viguraea* (Püng.)” – “Praep. Genit. Nr. 3145 ♀, I. Căpușe”.

*Dipsosphecia wagneri* Püngeler, 1912: 395 **syn. nov.** Lectotype ♂: 1/18 – Pr. gen. Nr. 3103 (I.C.) des. Căpușe 1973: 143 (MNHB). Labels: “1/18” – “Cotype, *Wagneri*, Püng. ♂” – “Lectotypus ♂, *Bembecia wagneri* (Püng.)”.

In the original description, Püngeler (1912) listed four specimens (2♂, 2♀) for *Dipsosphecia viguraea* all of which are preserved in the collection of the MNHB. Căpușe designated a female specimen (Fig. 1) as lectotype which agrees with the current understanding of this taxon. The female originally labelled ‘type’ became a paralectotype due to the selection of Căpușe.

In his description of *Dipsosphecia wagneri*, Püngeler (1912) listed four specimens, 1♂ and 3♀. Căpușe selected male specimen as lectotype (Fig. 2), which is conspecific with *Bembecia viguraea*. Thus, *D. wagneri* becomes a junior subjective synonym of *B. viguraea*. The female originally labelled ‘type’ (Fig. 4) is now a paralectotype due to Căpușe’s designation. This specimen and the two other paralectotypes of *Dipsosphecia wagneri* are, however, conspecific with *Bembecia wagneri sensu auctorum* (Gorbunov 1994, Špatenka et al. 1997, Špatenka et al. 1999, Špatenka & Kallies 2006). For the latter species, the name *Dipsosphecia auricaudata* Bartel, 1912 is available. Thus, *Dipsosphecia auricaudata* Bartel, 1912 stat. rev., which had been synonymized with *Bembecia viguraea* by Špatenka et al. (1993), is here considered a valid taxon, which replaces *Bembecia wagneri sensu auctorum* (see below).

### ***Bembecia auricaudata* (Bartel, 1912) stat. rev.**

**Figs 3–5**

*Dipsosphecia auricaudata* Bartel, 1912: 393. Căpușe 1973: 145 (*Bembecia*). Holotype (by monotypy) ♂ (Fig. 3): Ili-Gebiet (MNHB). Labels: “Asia centr., Turkestan, Ili-Gebiet, Coll. Wagner” – “Type, *auricaudata*, Bart. ♂” – “Praep. Genit. Nr. 3102 ♂, I. Căpușe”.

= *Bembecia wagneri sensu auctorum* (*nec* Püngeler 1912).

This species was described from a single male, which is the holotype (Fig. 3) of the species. This specimen is conspecific with *Bembecia wagneri sensu auctorum* (Gorbunov 1994, Špatenka et al. 1997, Špatenka et al. 1999, Špatenka & Kallies 2006). *Dipsosphecia auricaudata* Bartel, 1912 was erroneously synonymized with *Bembecia viguraea* by Špatenka et al. (1993).

### ***Bembecia polyzona* (Püngeler, 1912)**

**Fig. 6**

*Dipsosphecia polyzona* Püngeler, 1912: 394. Căpușe 1973: 144 (*Bembecia*). Lectotype ♀ (MNHB) (Fig. 6): Transcaspia (Merw.), 1908 – Pr. gen. Nr. 3143 (I.C.) des. Căpușe 1973: 144. Labels: “Transcaspia (Merw.), 1908” – “Cotype *polyzona* Püng. ♀” – “Hololectotypus ♀ *Bembecia polyzona* (Püng.)”.

= *Bembecia tsvetajevi* Gorbunov, 1992: 249 **syn. nov.** Holotype ♂: Middle Asia, Turkmenia, Ashkabad, 15.VIII.1928, leg. P. Donovan (ZMUM).

In the description of *Dipsosphecia polyzona*, Püngeler (1912) listed four specimens, 2♂ and 2♀. The female specimen from Merw (Turkmenistan) which Căpușe (1973)

selected as lectotype (Fig. 6), is conspecific with *Bembecia tsvetajevi* Gorbunov, 1992, which thus becomes a junior subjective synonym of *B. polyzona*. A male syntype of *B. polyzona* in Püngeler's collection, originally labelled as 'type' (Fig. 5), became a paralectotype due to the actions of Čăpușe. This specimen and a second male of the type series, housed in the Natural History Museum, Vienna, Austria, are typical *Bembecia auricaudata*. The other female listed by Püngeler (1912) could not be located.

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